REMARKS/ARGUMENTS

35 USC §112

The Office rejected **claim 7** under 35 USC 112, first paragraph as failing to comply with the written description requirement. Specifically, the examiner noted that the phrase "...further comprising as an additional ingredient an extract prepared from at least two of a bean of the *Coffea spec.* (coffee) cherry, a pulp of the *Coffea spec.* (coffee) cherry, a mucilage of the *Coffea spec.* (coffee) cherry, and a hull of the *Coffea spec.* (coffee) cherry..." would not find literal support in the application as filed. The applicant agrees and amended the claim accordingly. Support for claim 7 as amended is found, for example, in claims 6 and 7 as originally filed. The examiner's concern should therefore be overcome.

The Office rejected **claims 3-5, and 7-11** under 35 USC 112, second paragraph as being indefinite on various grounds.

Regarding claim 3, the examiner noted that the term "such as" would render the scope unclear with regard to the following limitations. The applicant amended the claim to even more clearly point out that the quick-dried coffee cherry has a specified mycotoxin content.

Regarding claim 5, the examiner noted that the claim would apparently lack a word and that claim 5 as such would be nonsensical. The applicant amended claim 5 by replacing the term "is" with the word --to-- (which was also added to subsequent limitations). Amended claim 5 should now be clear.

Regarding claim 7, the applicant points to the amendment noted above. The examiner's concerns should be overcome.

Regarding claim 8, the examiner noted that the term "the extract " would lack antecedent basis. The applicant amended claim 8 by providing antecedent basis for the objected term. Support for the amendment is found in the first paragraph of page 6. The examiner's concerns should be overcome.

Regarding the office's concern with respect to percentages recited in claims 8 and 9, the applicant notes that the claims call out wt%, which is the same as % by weight. The expression

wt% is well understood in the art as is evidenced in numerous issued US patents (see e.g., claims and specification of U.S. Pat. No. 7,544,352).

35 USC §103

The Office rejected **claims 1 and 3-15** as being obvious over Bertrand et al. (Plant Science, 2001) in view of Lintner (WO 99/63963), and further view of Soucy (A*), Fabian (B*), Olkku (C), Miljkovic (D*), Batista (V), and Frank (W). The applicant respectfully disagrees, especially in view of the following observations:

(1) A Limitation Is Missing In The Office's Reasoning

Claim 1 and all claims dependent thereon specifically require among other elements that the whole *Coffea spec.* (coffee) cherry is a ***dried*** *Coffea spec.* (coffee) cherry. The applicant agrees with the examiner's characterization that "…Bertrand teaches extraction of chlorogenic acids from frozen whole *Coffea spec.* (coffee) cherry with methanol-water…" However, it is noted that Bertrand immediately flash freezes the fruit after collecting, and then extracts the fruit with methanol/water (page 1356, right column, lines 10-14). Thus, ***the fruit that is processed by Bertrand is the fresh fruit with full water content***. This defect is neither remedied by Linter, nor the remaining references that were cited in conjunction with the element of 'quick-drying' as further addressed below.

(2) The Office's Reasoning For Combination Of Bertrand And Linter Is Factually Not Supported

While the applicant agrees with the examiner's characterization of Linter as teaching a cosmetic composition comprising chlorogenic acid from coffee bean extract and shea butter extracts for soothing the skin and reducing inflammation, lines and wrinkles, the applicant respectfully disagrees with the examiner's proposed motivation.

More specifically, the office stated that "…Bertrand taught that the concentrations of chlorogenic acids *increase* during the maturation of a coffee cherry…" However, the opposite is the case. Bertrand expressly states:

> "...In both organs, *CGA [chlorogenic acids] content strongly decreased during the growth*...(Abstract, line 4; emphasis added)",
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> that
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> "...During fruit ripening, the *highest CGA content was observed in stage 1*...*CGA content decreased linearly up to stage 3* and no difference was recorded between stages 3 and 4...(page 1357 first sentence in 3.1; emphasis added)", and
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> that
>
> "...*In both organs CGA content was maximal at the youngest stages*...(page 1359, right column, lines 6-7; emphasis added)"

This is also clearly reflected in the numerical results of Table 1 on page 1358 where the CGA content drastically declines with progressing fruit ripening. The examiner's argument is therefore not supported by the cited reference. Thus, Bertrand fails to provide the suggested motivation, particularly as the claims expressly require primarily red or almost ripe coffee cherries.

(3) Bertrand Teaches Against A Combination With Linter

Even assuming that the CGA concentration would increase in coffee cherries during fruit maturation (which is not the case as can be taken from the above), Linter still teaches against use of the whole coffee cherry for at least the following reason as can be seen on page 1359, right column, last sentence, where Linter teaches:

> "...By contrast, *in endosperm [which is the seed], i.e., the tissue with non-sporophytic origin, CGA accumulation is observed during seed growth* in *C. canephora, C. liberica*, and *C. Arabica*..."

Consequently, if Linter provides motivation for anything, it is a motivation to use the seed of the coffee fruit as the seed accumulates the overall diminishing chlorogenic acid. Thus, there is no suggestion or motivation in Linter to use the entire fruit.

Still further, it is pointed out that Linter expressly teaches use of ***green coffee beans*** (*e.g.*, page 2, line 28 to page 3, line 1), but is entirely devoid of any teaching of coffee cherries, let

alone of dried coffee cherries with the claimed degree of ripeness. Bertrand reports on the analysis of chlorogenic acid content in the fruit and leaves of *Coffea pseudozanguebariae*, finding that the ***total CGA content in the fruit dramatically decreases with maturity of the fruit***. Bertrand is not concerned with use of coffee cherries in any context other than the analysis of total CGA and specific subspecies of CGA.

Consequently, it should be seen from the above that the references not only fail to teach each and every element, but also that the references and the knowledge in the art fail to provide a motivation to combine the cited art in a manner as proposed by the office. Indeed, Bertrand does provides reasons against the combination as suggested by the office.

(4) The Office's Reasoning For Combination Of Bertrand/Linter with Batista and Frank Is Factually Not Supported

The examiner argued in the sentence spanning pages 8 and 9 that "...it would have been obvious to one of ordinary skill in the art to *subject the coffee cherry* used in the making of the cosmetic composition taught by the references *to a quick-drying protocol* to provide the instantly claimed inventions *because at the time the invention was made studies showed that Aspergillus, Penicillium and Fusarium are natural coffee contaminants having the potential to produce aflatoxins, ochratoxins, and fumonisins which are detrimental to the quality and safety of the final product* (see Batista and Frank) (emphasis added)..."

(a) It is noted that ***Batista entirely fails to discuss coffee cherry drying***, but is concerned with processed green coffee beans (see *e.g.*, first sentence of abstract; description of samples on page 294, item 2.1., and description of fungal isolation on page 294, item 2.2.). The ***applicant could not find any support for the office's argument that Batista would teach a quick-drying protocol*** as indicated by the examiner. In case the applicant overlooked such teaching, a brief identification with page and line number would be appreciated.

Moreover, it is further noted that ***Batista teaches coffee bean disinfection with sodium hypochlorite, thus teaching against a quick-drying process***. Finally, the applicant notes that the ***ochratoxin levels discussed by Batista*** (see *e.g.*, abstract, last sentence) ***are below the levels as***

presently claimed. As such, Batista clearly fails to provide any motivation for combination with Bertrand/Linter.

(b) Similarly, with respect to Frank it is stressed that Frank teaches in certain instances away from quick drying, and in other instances against quick-drying of coffee cherries. More specifically, in paragraph 7 on coffee processing, Frank teaches that "...***the surrounding fruit tissues must be separated from them [the beans]***..." and continues in paragraph 16 that "...The ***elimination of the fruit tissues and thereby the associated microbial load***, is also a significant aspect of these procedures..." Moreover, as can be taken from paragraph 26, Frank teaches that "...The ***outer fruit layers, especially after drying, were found to contain OTA and OTA producing fungi*** more frequently than did the beans thus ***the removal of this material (pulping dehulling) reduces the biomass of these fungi***..." Clearly, such teaching is inconsistent with subjecting the coffee cherry to a quick drying protocol to achieve a certain mycotoxin level as the office proposed. Indeed, *the above passages provide a motivation to remove the pulp and other layers from the seed*.

Regarding paragraph 27 in Frank it is pointed out that this paragraph specifically addresses the beans when discussing the drying rate as critical control parameter (see line 3 same paragraph), which is also clearly reflected in Figure 1 on the preceding page in Frank where the processing step includes pulping and dehulling, and where the subsequent drying step refers to the critical time between Aw 0.80 and 0.94.

Lastly, it should be appreciated that Frank teaches in paragraph 23 in item (g) that "...***Cherries in the wet state are not prone to Aspergillus development***...", which removes any motivation for a quick-drying protocol as suggested by the office. Indeed, as can be taken from item (h), "...***A. ochraceus was observed to increase in frequency during drying***..." Certainly, such teaching is contrary to the claimed subject matter and yet again removes any motivation for a quick-drying protocol as suggested by the office.

(5) The Office's Reasoning For Combination Of Bertrand/Linter/Batista/Frank with Soucy, Fabian, And Olkku Is Factually Not Supported

The examiner took note that "...Soucy, Fabian, Olkku and Miljkovic teach quick-dry methods for reducing the number of the toxigenic fungal genera and mycotoxin contaminants in coffee cherry or coffee bean products, or similar crops..."

(a) With respect to Miljkovic, the applicant agrees. However, the ***Miljkovic reference is disqualified as under 35 U.S.C. 103(c)*** as the subject matter of the reference qualifies as prior art only under 35 U.S.C. 102(e), and as that the subject matter of the '508 reference and the claimed invention was, at the time the claimed invention was made, owned by the same person or was subject to an obligation of assignment to the same person. The '508 application is a U.S. national phase application of the WO 2004/098320 application, which was subject to assignment to VDF FutureCeuticals as recorded in 014270/0389 (reel/frame).

(b) With respect to Soucy, the applicant agrees with the office's position that Soucy would teach "...an apparatus for drying...coca beans (whole coffee cherry)...". However, it is unclear to the applicant what the office intends to express. ***Coca beans are not whole coffee cherries***. Clarification is respectfully requested. The examiner further appeared to argue that "...Soucy further teaches that the ***drying apparatus*** provides a simple solar powered dryer system ***for the removal of moisture from bulk materials such as whole coffee cherries which significantly reduces the moisture content***..." First, it is noted that Soucy does not teach removal of moisture from coffee cherries, but from coffee beans. Second, the examiner's reasoning does not support the statement that Soucy would teach quick-dry methods for reducing the number of the toxigenic fungal genera and mycotoxin contaminants in coffee cherry. At best, Sucy teaches drying of coffee beans. However, such drying process is immaterial to the claimed subject matter. Thus, at best Soucy teaches away from combination with the remaining art.

(c) With respect to Fabian, the applicant agrees with the office's position that Fabian would teach "...a process for removing mycotoxins that may be present in ***green coffee***, such as aflatoxins and ochratoxins, by ***solvent extraction*** and exposure to high temperature and ***water vapor***...". However, what is claimed is a quick-dried coffee cherry. Steam treatment, however, is contrary to quick-drying. Thus, at best Fabian teaches away from combination with the remaining art.

(d) With respect to Olkku, the applicant again agrees with the office's position to at least some degree. While Olkku does indeed teach a "…heat treatment method for decreasing the mold content and the mycotoxin level in seed products…" as noted by the office, the applicant disagrees with the statement that Olkku teaches "…*quick-drying the kernels* for a short period of time at a temperature range…" Most notably, it should be appreciated that the ***exposure to high temperature taught by Olkku is limited to 30 seconds or less, which is entirely insufficient for drying of kernel, let alone a coffee cherry***. Indeed, ***Olkku must prevent drying of the seeds*** as the seeds are later used for germination. Certainly, the seeds of Olkku will no longer germinate once dried as required by the present claims. Once again, the reference fails to provide any motivation or suggestion for combination with the remaining art.

Based on the above, it should be recognized that (a) Soucy fails to teach a quick-drying method for coffee cherries, but is only concerned with drying of coffee beans; (b) Fabian fails to teach that the method of Soucy effectively removes mycotoxins as Fabian uses steam and solvent treatment, which can hardly be considered a drying method; (c) Olkku fails to teach quick-drying, as Olkku teaches short-term heat treatment not exceeding 30 seconds; and (d) Miljkovic is disqualified as reference under 35 U.S.C. 103(c). Consequently, and at least for these reasons, the rejection of claims 1 and 3-15 as being obvious over Bertrand et al. in view of Lintner, and further view of Soucy, Fabian, Olkku, Miljkovic, Batista, and Frank should be withdrawn.

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The Office also rejected **claims 15-18 and 20** as being obvious over Bertrand et al. (Plant Science, 2001) in view of Lintner (WO 99/63963), and further view of Soucy (A*), Fabian (B*), Olkku (C), Miljkovic (D*), Batista (V), and Frank (W) as applied above in further view of "The Free Dictionary by Farlex".

With respect to the combination of Bertrand et al. in view of Lintner, and further view of Soucy, Fabian, Olkku, Miljkovic, Batista, and Frank, the same deficiencies and arguments as provided above apply and are not reiterated here. The Free Dictionary by Farlex fails to remedy these defects. Consequently, claims 15-18 and 20 should not be deemed obvious over the cited art and the rejection should be withdrawn in light of the above arguments and amendments.

Request For Allowance

Claims 1, 3-18, and 20 are pending in this application. The applicant requests allowance of all pending claims.

Respectfully submitted,
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